

WHAT IS CLAIMED IS:

1. A manufacturing method for a semiconductor device having silicon oxide films with at least two or more different thicknesses formed on a silicon substrate, comprising:

forming a first silicon oxide film;
nitriding the first silicon oxide film; and
removing at least a part of the first silicon oxide film with a chemical containing at least an ammonia-hydrogen peroxide solution and forming a second silicon oxide film in at least a portion where the first silicon oxide film is removed.

2. A manufacturing method for a semiconductor device according to claim 1, wherein in the nitriding of the first silicon oxide film, an inert gas containing at least an ammonia gas is used.

3. A manufacturing method for a semiconductor device having silicon oxide films with at least two or more different thicknesses formed on a silicon substrate, comprising:

forming a first silicon oxide film;
nitriding the first silicon oxide film; and
removing at least a part of the first silicon oxide film, washing the silicon substrate with a chemical containing at least an ammonia-hydrogen peroxide solution, and forming a second silicon oxide film in at least a portion where the first silicon oxide film

is removed.

4. A manufacturing method for a semiconductor device according to claim 3, wherein in the nitriding of the first silicon oxide film, an inert gas containing at least an ammonia gas is used.